because data and modeling of wet weather events often do not give a clear picture of the level of CSO controls necessary to protect WQS [Water Quality Standards]".

The performance criteria for the presumption approach option selected by the Discharger specifies the elimination or the capture for treatment of no less than 85 percent by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis. In addition, CSOs remaining after implementation of the NMCs and that is captured for treatment should receive a minimum of:

- Primary clarification (removal of floatables and settleable solids may be achieved by any combination-of treatment technologies or methods that are shown to be equivalent to primary clarification.);
- Solids and floatables disposal; and
- Disinfection of effluent, if necessary, to meet WQS, protect designated uses and protect human health, including removal of harmful disinfection chemical residuals, where necessary."

The Discharger's LTCP generally exceeds the specifications of the CSO Control Policy's presumption approach. The majority of the time the Discharger captures and provides treatment for up to 100 percent of the combined sewer flows rather than the 85 percent (there have been infrequent instances where small volumes of untreated overflows have occurred from Discharge Point Nos. 004, 005, and 007). Therefore, almost all CSOs that occur from the Facility receives treatment (within the storage/transports) consisting of removal of floatable and settleable solids.

In addition, the Discharger previously (1995) submitted a water quality assessment of remaining CSOs. The assessment indicated that water quality impacts and beneficial use impairments to the Sacramento River were negligible due to CSOs. Since that assessment, the volume of treated and untreated discharges has been reduced even further, providing additional protection of beneficial uses.

This Order will require continued implementation of its LTCP as it relates to the capture and treatment of a minimum of 85 percent of the combined sewer flows. However, there are several issues with the Discharger's development and implementation of its LTCP that also need to be addressed in the Order as it relates to the LTCP. First is the slow pace of CSS rehabilitation and replacement work such that the 1995 interim and final LTCP goals have not yet been achieved. Second, the LTCP goals are focused on the reduction of outflows from the CSS, and most efforts are focused on achieving those goals. Since 1995, the Discharger's has not evaluated whether its implemented LTCP projects under the presumption approach are ensuring continued compliance with water quality standards or are adequately protecting designated uses. Third is the need for

improving procedures for tracking and documenting LTCP progress. Each of these issues is described further below.

i. CSS Rehabilitation and Replacement Efforts

With respect to achievement of 1995 Interim goals for reduction of CSS outflows and flooding consistent with the 1995 LTCP interim goals, the Discharger has been focusing on providing peak flow storage and relief for six priority locations throughout the CSS that were prone to flooding and outflows. As described in the USEPA CEI report, and as described in the Discharger's May 2003 performance update, the interim goals have not yet been achieved. Although the Discharger noted reductions in system flooding due to improvement and rehabilitation projects undertaken, the SWMM model projections performed in 2003 still predicted outflows and street flooding throughout the system in the event of a 10-year storm event, even in the six priority areas. The Discharger currently plans to calibrate and update the computer model that is used to model flow in the CSS and Phase 1 will also evaluate outflow reduction in the six priority areas. In September 2008, the Discharger awarded a contract for implementing Phase I of this two-phase project. This effort is planned for completion in the fall of 2009 (unless significant rainfall events do not occur, then the completion date will extend beyond the 2009-2010 rain season). Phase 2 of the project will utilize the new calibrated model to evaluate future construction projects in the CSS that will reduce combined sewer outflows.

In its 2005 CEI report, USEPA noted a general lack of timely rehabilitation and replacement of aging and deteriorated CSS infrastructure. The report cites the fact that the Discharger is rehabilitating and replacing sewer pipe within the CSS at a rate of approximately 0.4% per year. Attachment H summarizes the LTCP updates provided by the Discharger, as required under Order No. 5-01-258, during the term of the existing Order. As shown in Attachment H, it appears as if a number of projects scheduled for completion span several fiscal years. The Discharger in its response to the USEPA CEI report noted that they are only required by Order No. 5-01-258 to submit a list of projects that are scheduled for completion in the next 12 months; the fact that some projects are delayed reflects "...the reality that large infrastructure projects in an urbanized area may sometimes be delayed, due to various complex issues that need to be addressed and resolved for construction to begin."

In 2005 the Discharger had initiated a sewer infrastructure Replacement and Management Program (RAMP) that was scheduled for completion in 2007, but was never completed. The Discharger now uses the CIP program and an asset management approach to prioritize projects based on a combination of their relative criticality and condition. This asset management approach addresses the entire collection system managed by the Discharger (both the combined and separate systems). Following is the description provided by the Discharger regarding the asset management approach:

"Infrastructure rehabilitation and replacement projects are evaluated utilizing an asset management approach by prioritizing projects based on a combination of their relative criticality and condition for both the combined and separated systems. This approach ranks rehabilitation and replacement projects such that highly critical portions of the system are replaced prior to failing while less critical facilities are replaced as they approach failure or fail. Rehabilitation and replacement CIP projects are prioritized by a ranking score that multiplies the criticality score by the condition score.

Criticality:

The Department's sewer assets are considered critical should a disruption of service substantially impact the health, safety, security and economic well-being of the City. The level of criticality is a relative measure of the consequence of failure.

Utilizing a matrix rating system based on six organizational objectives, the Department has developed a ranking of critical sewer infrastructure with a score from 1 to 10 with a score of 1 being "negligible" and a score of 10 being "catastrophic". The scoring for criticality is averaged amongst six categories for a final score. The areas of the sewer infrastructure that are rated most critical are areas that will suffer the highest consequence due to catastrophic failure.

Condition Assessment:

Condition assessment of assets is the foundation of asset management decision making.

Since the majority of linear assets (pipelines) are inaccessible, condition assessment is extremely complicated. Pipeline age and material type are good indicators of the condition; however, it is usually a combination of several factors that causes failures and influences maintenance decisions. This complicates the decision making process of diagnosing failures, learning about deterioration mechanisms and measuring condition.

The condition ranking of sewer assets is scored from 1 to 5 with a score of 1 being "excellent" and a score of 5 being "failed". Infrastructure is deemed to be "failed" if the identified defect(s) are substantial and problematic enough that repairs are not likely to be practical or feasible. These projects are often identified by the number or severity of trouble calls or alarms responded to by the Department."

Because the asset management approach is used for both the combined and separate systems, and the fact that "*...the Department's sewer assets are considered critical should a disruption of service substantially impact the health, safety, security and economic well-being of the City*" (emphasis

added), it is uncertain how the LTCP goals and projects are addressed in the Discharger's asset management approach.

Based on the above, it is uncertain what the schedule is for the Discharger to achieve their interim and final LTCP goals. The Order will require, as part of the LTCP update requirement, that the Discharger specifically provide a schedule for achieving the LTCP goals, and identify the mechanisms for ensuring that projects required for achieving those goals within the schedule will be prioritized to minimize or eliminate any potential delays for implementation and completion.

ii. Protection of Receiving Water Quality from CSOs

The CSO Control Policy presumes that compliance with performance criteria generally will be sufficient to meet applicable water quality objectives. As described above, the Discharger has selected the presumption approach, and the Discharger's LTCP exceeds the performance specifications. However, selection of the presumption approach does not relieve the Discharger from the need to develop and implement a post-construction compliance monitoring program for the remaining CSOs to verify compliance with water quality standards and protection of designated uses. If the monitoring program indicates nonattainment with water quality objectives due to CSOs or CSS outflows, the Discharger may need to implement a greater level of control.

The following tables summarize the CSO discharges that were reported during the term of the previous Order.

Table F-5. Number of CSO Discharges Reported

Storm Year	Number of Discharge Events from CSO Discharge Points						Total No. System Events[1]
	002	003	004	005	006	007	
10/01 - 9/02 [2]	0	0	0	0	2	0	2
10/02 – 9/03	1	0	0	0	4	0	4
10/03 – 9/04	4	0	0	0	4	0	4
10/04 – 9/05	2	0	0	0	2	0	2
10/05 – 9/06	5	0	1[3]	0	8	0	9
10/06 - 9/07	0	0	0	0	0	0	0
10/07 - 9/08	2	0	1[3]	0	3	0	3

[1] The total number of system events represents the number of distinct storm events that resulted in a discharge from one or more of the authorized discharge points (Discharge Point Nos. 002, 003, 004, 005, 006, and 007).
[2] Data for this storm year started on January 1, 2002.
[3] The untreated discharge reported for 31 December 2005 represented a total flow of 61.14 million gallons; the untreated event that occurred on 4 January 2008 represented a total flow of 11.25 million gallons.

Table F-6. Detailed Summary of Reported CSO Discharges as Reported in SMRs

	Discharge Point No. 002 (CWTP)				Discharge Point No. 006 (Pioneer Reservoir)			
Date	Peak Flow (mgd)	Avg. Flow (mgd)	Total Flow Treated (mg)	Rain Fall Total (Inches)	Peak Flow (mgd)	Avg. Flow (mgd)	Total Flow Treated (mg)	Rain Fall Total (Inches)
01/02/02[2]	ND	ND	ND	ND	146	130.0	14.4	1.01
05/20/02[2]	ND	ND	ND	ND	277	189.5	72.8	1.61
11/07/02	ND	ND	ND	ND	350.0 or 308[1,3]	308[1]	35.3[1]	1.09[1]
12/14/02	ND	ND	ND	ND	300 or 350[1,3]	182[1]	20.0	1.08[1]
12/16/02	ND	ND	ND	ND	350 or 265[1,3]	162[1]	35.5[1]	0.77[1]
03/15/03	130[1]	28.5[1]	5.4	0.45	367.0[1]	212[1]	35.3[1]	1.22[1]
12/29/03	130[1]	113.0[1]	14.2	1.06	230[1]	207[1]	25.8[1]	1.06[1]
01/01/04	130[1]	64.0	7.2	1.08	253.0 or 260[1,3]	227[1]	25.3[1]	1.08
02/18/04	130[1]	108.6	6.5[1]	1.55[1]	250.0[1]	194[1]	260.0[1]	1.55[1]
02/25/04	133[1]	123.8[1]	21.7	1.32[1]	409.0[1]	284[1]	59.2[1]	1.32[1]
10/26/04	118	118.0	5.3	1.01	232.0	176.0	9.2	1.01
12/30/04	130[1]	73[1]	26.8	1.34	207	149	27.5	1.34
12/01/05	ND	ND	ND	ND	117.0	86.0	8.1	1.07
12/18/05	120[1]	120.0	18.3	2.13	270.0 or 272[1,3]	186.3[1]	53.3[1]	1.29[1]
12/26/05	ND	ND	ND	ND	109.0	42.71	2.2	0.45
12/31/05[4]	130	130.0	65.0	4.05	500.0	193.0	193.0	4.05
01/01/06[4]	ND	ND	ND	ND	270.0	74.9	75.0	0.65
01/02/06[4]	130	98.0	23.7	0.97	382.0[1]	117.0	117.0	0.97[1]
01/03/06[4]	ND	ND	ND	ND	63.0 or 82[1,3]	43.0[1]	32.0	0.01
01/04/06[4]	ND	ND	ND	ND	35.0	24.3[1]	7.7	0
02/27/06	90	51.5[1]	9.3	1.14	371.0[1]	180.0	15.0	1.14
03/06/06[2]	ND	ND	ND	ND	132	106.3	31	0.54
03/25/06[2]	130	123.3	8.9	1.04	260	192	27.5	0.83
04/03/06[2]	ND	ND	ND	ND	267	194	64.2	0.98
12/06/07[2]	130	116.7	16.3	2.02	425	236.5	61.0	2.02
01/04/08[2]	130	130	27.1	1.96	405	259.0	82.8	1.96
01/22/08[2]	ND	ND	ND	ND	310	270.0	41.6	1.50

ND – No Discharge
[1] Data submitted with the permit application was different than the data shown that was taken from SMR data.
[2] Data was taken from the permit application.
[3] The reported data within the SMR was inconsistent; both reported values are provided.
[4] Represents discharges for a single event that occurred over the course of 5 days.

Monitoring was required in Order 5-01-258 to determine compliance with effluent limitations for TSS, settable solids, chlorine residual and fecal coliform for discharges from the CWTP and Pioneer Reservoir. Table F-2 summarized the monitoring data for the regulated parameters. As shown in Table F-2, periodic exceedances of effluent limitations were reported.

In the early 1990s, the Discharger conducted several water quality monitoring programs to assess the potential impact of CSOs on the water quality of the Sacramento River. In summary, the Discharger found that the CSO discharges did not result in significant impairment of the quality of the Sacramento River. Although exceedances of water quality objectives were noted for copper, lead, zinc, silver, and cadmium, these exceedances occurred both upstream and downstream of the CSOs (i.e., the CSOs themselves did not cause an exceedance of water quality objectives). Generally, the frequency of CSO discharges has decreased since these assessments in the early 1990s.

Order No. 5-01-258 required monitoring discharges from the Pioneer Reservoir and the CWTP for a select group of constituents (dissolved copper, lead, and zinc, and the pesticides diazinon, chlorpyrifos, and diuron) to evaluate the effectiveness of the Discharger's storm water pollution prevention program to control these constituents. The Table below provides a summary of the results.

Table F-7. Summary of Toxic Pollutant Monitoring Results for the City of Sacramento CSO Discharges (For Storm Years 2002 through 2008)

Pollutant	No. Data Points	No. of Reported Non Detects or Below Detection Limits	Minimum Reported Value (µg/L)	Maximum Reported Value (µg/L)	Most Stringent Objective (µg/L)[1]
Discharge Point No. 002 (CWTP)					
Copper, Dissolved	14	9	<10	99	5.0
Lead, Dissolved	14	14	<5	<5	1.8
Zinc, Dissolved	14	0	44	360	65.7
Diazinon	14	14	ND (0.25)[2]	ND (0.25)[2]	0.10
Chlorpyriphos	14	14	ND (1.0)[2]	ND (1.0)[2]	0.015
Diuron	14	12	ND (1.0)[2]	4.1	[3]
Discharge Point No. 006 (Pioneer Reservoir)					
Copper, Dissolved	27	22	<10	22	5.0
Lead, Dissolved	27	26	<5	5.1	1.8
Zinc, Dissolved	26	0	22	200	65.7
Diazinon	27	27	ND (0.25)[2]	ND (0.25)[2]	0.10
Chlorpyriphos	27	27	ND (0.25)[2]	ND (1.0)[2]	0.015
Diuron	26	24	ND (0.5)[2]	1.8	[3]
Discharge Point Nos. 004 and 005 (Flow Control Structure)					
Copper, Dissolved	2	1	<10	13	5.0
Lead, Dissolved	2	2	<5	<5	1.8
Zinc, Dissolved	2	0	36	55	65.7
Diazinon	2	2	ND (0.25)[2]	ND (0.46)[2]	0.10

Pollutant	No. Data Points	No. of Reported Non Detects or Below Detection Limits	Minimum Reported Value (µg/L)	Maximum Reported Value (µg/L)	Most Stringent Objective (µg/L)[1]
Chlorpyriphos	2	2	ND (0.18)[2]	ND (1.0)[2]	0.015
Diuron	2	2	ND (1.0)[2]	ND (2.4)[2]	[3]

[1] The most stringent applicable water quality objective from the Basin Plan and CTR. For hardness dependent criteria, a hardness of 50 mg/L as $CaCO_3$ was assumed.

[2] ND - Reported as non-detect. Value in parentheses indicates reporting limit as reported by the Discharger.

[3] According to the Basin Plan, total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods. Order No. 5-01-258 required that the analytical method for the pesticides should have a detection level no greater than 100 ng/L.

Based on the above, it is uncertain whether the LTCP, after implementation of the NMCs and capture and treatment in the CWTP and Pioneer Reservoir, will continue to provide the level of treatment necessary to meet existing water quality objectives. This Order will require the Discharger to develop and implement a CSO water quality assessment (see Section VII.B.2.a below for a more detailed description of the assessment requirements) that will evaluate whether additional controls will be required and revisions to the Discharger's Long-Term Control Plan and/or applicable water quality objectives will be necessary to protect receiving water quality.

iii. Improving Procedures for Tracking and Documenting LTCP Implementation

As described earlier, it is uncertain when CSS improvement projects are to be completed by the Discharger, or how well the Discharger is doing in relation to meeting the LTCP interim and final goals for reducing CSS outflows and street flooding. The current annual LTCP updates provided by the Discharger in accordance with the Order 5-01-258, only report the rehabilitation and improvement projects planned for the coming year. The annual LTCP updates do not however, provide information to track progress on implementing current projects or when projects are actually completed. In its CEI report, USEPA suggested changes to the annual LTCP updates to include a description of work completed during the past year, as well as maintenance of a running list of LTCP projects showing the proposed completion dates, any extensions to the completion dates, and the actual completion dates.

This Order will require the preparation and submission of annual LTCP updates to more closely track LTCP implementation by the Discharger.

d. Specific Parameters of Concern

The Order 5-01-258 included effluent limitations for chlorine residual, pathogens (fecal coliforms), pH, settleable solids, and temperature based on water quality objectives contained in the Basin Plan. Based on the expected characteristics of CSOs (containing minimally treated sewage combined with storm water), and the Facility operations (involving chlorination), the Regional Water Board will carry over the effluent limitations from Order 5-01-258.

i. Chlorine Residual

USEPA developed National Ambient Water Quality Criteria (NAWQC) for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

The Discharger uses chlorine (sodium hypochlorite) for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses a sulfur bisulfate process to dechlorinate the effluent prior to discharge to the Sacramento River.

The USEPA *Technical Support Document for Water Quality-Based Toxics Control* [EPA/505/2-90-001] contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. Consistent with the existing order and due to the infrequent and short-term nature of CSO discharges from the Facility, only protection for acute impacts are considered necessary. Therefore only a maximum daily effluent limitation will be established based on the 1-hour average acute NAWQC for chlorine residual (0.019 mg/L), which implements the Basin Plan's narrative toxicity objective for protection of aquatic life. These effluent limitations will apply to Discharge Point Nos. 002 (CWTP) and 006 (Pioneer Reservoir).

Analysis of the effluent data shows that the MEC of 1.8 mg/L, for a sample taken in January 2006, was the only detected value for chlorine since 2003. According to the January 2006 SMR, operational problems at SRWTP caused the Facility to treat and discharge longer than usual. As a result, the Pioneer Reservoir system ran out of dechlorination agent for approximately 15 minutes, resulting in the detected value. In light of the fact that the Facility is designed to dechlorinate, the Regional Water Board concludes that immediate compliance with the effluent limitations is therefore feasible.

ii. Pathogens

The Regional Water Board, when developing NPDES permits, implements recommendations by DPH for the appropriate disinfection requirements for the protection of MUN, REC-1 and AGR.

In 1987, the Department of Health Services (DHS) (now the Department of Public Health, or DPH) issued the "Uniform Guidelines for the Disinfection of Wastewater" (Uniform Guidelines), which included recommendations to the Regional Water Board regarding the appropriate level of disinfection for wastewater discharges to surface waters. In a letter to the Regional Water Board dated 8 April 1999, DPH indicated it would consider wastewater discharged to water bodies with identified beneficial uses of irrigation or contact recreation and where the wastewater receives dilution of more than 20:1 to be adequately disinfected if the effluent coliform concentration does not exceed 23 MPN/100 mL as a 7-day median and if the effluent coliform concentration does not exceed 240 MPN/100 mL more than once in any 30 day period. In a subsequent letter dated 1 July 2003, DPH states that a *filtered and disinfected effluent should be required in situations where critical beneficial uses (i.e. food crop irrigation or body contact recreation) are made of the receiving waters unless a 20:1 dilution ratio is available. In these circumstances, a secondary, 23 MPN discharge is acceptable.*" DPH considers such discharges to be essentially pathogen-free.

There are no numeric water quality objectives for pathogens applicable to the receiving water for the protection of MUN. The applicable narrative water quality objective that applies to surface waters is the bacteria objective in the Basin Plan, which states, "*In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.*"

Municipal and domestic supply, agricultural irrigation, and body contact water recreation are beneficial uses of the Sacramento River. In an effort to control the discharge of coliform bacteria in CSO discharges, the previous Order included effluent limitations for fecal coliform bacteria at 200 MPN/100 mL for a storm year median, and no higher than 1,000 MPN/100 mL in three consecutive samples. The previous Order also required that the Discharger continuously operate the chlorination equipment when discharging to the Sacramento River. As was shown in Table F-2, the highest storm year median was reported at 330 MPN/100 mL.

Based on a review of data submitted by the Discharger and the period of record for the United States Geological Survey monitoring stations on the Sacramento River, and the fact that CSO discharges typically occur during the rainy season, 20:1 (river flow to design effluent flow) dilution is always available.

Because CSO discharges typically occur for relatively short durations and only during extreme storm events, it is unlikely that recreational activities will occur concurrently with the CSO discharges. However, protection of the MUN use will be provided by carrying over the existing effluent limitations and discharge requirements to control the discharge of coliform bacteria. These coliform limits are imposed to protect the beneficial uses of the receiving water. These effluent limitations will apply to the Pioneer Reservoir and CWTP discharge points.

Except for one instance in January 2004, the Facility has consistently achieved very low levels of fecal coliform in the effluent (the majority of samples were reported as <2 MPN/100 mL).

iii. pH

The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "*...pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses.*"

Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are carried over from Order No. 5-01-258 and included in this Order based on protection of the Basin Plan objectives for pH.

Analysis of the effluent data shows that the reported pH levels are within the applicable water quality objectives. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. Settleable Solids

For inland surface waters, the Basin Plan states that "*...[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.*" This Order carries over from Order No. 5-01-258 the maximum daily effluent limitation for settleable solids to ensure that the Pioneer Reservoir and CWTP treatment works operate in accordance with design capabilities. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order.

Analysis of the effluent data shows that the reported settleable solids levels are within the applicable water quality objectives. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. Temperature

The Thermal Plan requires that, "*The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.*" CSO discharges are considered an existing elevated temperature waste, as the temperature of the discharge is higher than the natural temperature of the Sacramento River.

To ensure compliance with the Thermal Plan, the effluent limitations for temperature from Order No. 5-01-258 are carried over to this Order. .

Analysis of the effluent data shows that the reported temperature levels are within the applicable water quality objectives. The Regional Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

e. Other Parameters of Concern

Monitoring data provided by the Discharger during the previous permit term for several other parameters were evaluated in relation to the potential for regulation under this Order.

i. Persistent Chlorinated Hydrocarbon Pesticides

The Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; persistent chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies.

Order No. 5-01-258 required monitoring for diuron, and since February 2004, diuron has not been detected in any of the CSO discharges. Prior to February 2004, diuron was periodically detected in the effluent from the CWTP (Discharge Point No. 002), the Sump 2/2A Flow Control Structure (Discharge Point Nos. 004 and 005), and Pioneer Reservoir (Discharge Point No. 006).

Diuron is a commonly used and applied herbicide; it is currently on the California groundwater protection list, except for when it is contained in products with levels less than 7 percent and when applied to foliage.

Due to the uncertainty of the exact source(s) of diuron, the existing program being implemented by the Discharger to reduce pollutants in stormwater (see below), and the fact that it has not been detected since 2004, no effluent limitations for diuron are included in this Order.

The Discharger, as part of their Public Outreach Program component of their Stormwater Quality Improvement Plan (as required under Municipal Separate Storm Sewer System Order R5-2008-0142), implements a variety of educational stormwater and urban runoff outreach programs. These programs are designed in part to reduce to the maximum extent practicable, pollutants in stormwater discharges associated with the application of pesticides, herbicides, and fertilizer. As these programs are implemented City-wide, the programs should also assist in reducing the likely presence of diuron when CSO discharges occur.

ii. Diazinon and Chlorpyrifos

The Regional Water Board recently completed a TMDL for diazinon and chlorpyrifos in the Sacramento-San Joaquin Delta and amended the Basin Plan to include diazinon and chlorpyrifos waste load allocations and water quality objectives on 10 October 2007. The amendment provides that: ..."*The Waste Load Allocations (WLA's) for all NPDES-permitted dischargers... shall not exceed the sum (S) of one (1) as defined below.*

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where

C_D = diazinon concentration in µg/L of point source discharge for the WLA.
C_C = chlorpyrifos concentration in µg/L of point source discharge for the WLA.
WQO_D = acute or chronic diazinon water quality objective in µg/L.
WQO_C = acute or chronic chlorpyrifos water quality objective in µg/L.

Available samples collected within the applicable averaging period for the water quality objective will be used to determine compliance with the allocations and loading capacity. For purposes of calculating the sum (S) above, analytical results that are reported as "non-detectable" concentrations are considered to be zero."

Water quality objectives for diazinon and chlorpyrifos to be used in the additive toxicity WLA were included in the amendment and are incorporated into Table III-2A of the Basin Plan as shown in the table below.

Table F-8. Site-Specific Water Quality Objectives for Diazinon and Chlorpyrifos

Pesticide	Maximum Concentration and Averaging Period	Applicable Water Bodies
Chlorpyrifos	0.025 µg/L; 1-hour average (acute) 0.015 µg/L; 4-day average (chronic) Not to be exceeded more than once in a 3 year period.	San Joaquin River from Mendota Dam to Vernalis (Reaches include Mendota Dam to Sack Dam (70), Sack Dam to Mouth of Merced River (71), Mouth of Merced River to Vernalis (83)), Delta Waterways listed in Appendix 42
Diazinon	0.16 µg/L; 1-hour average (acute) 0.10 µg/L; 4-day average (chronic) Not to be exceeded more than once in a 3 year period.	

The Basin Plan also states that: *"[c]ompliance with water quality objectives, waste load allocations, and load allocations for diazinon in the Delta Waterways is required by December 1, 2011."*

As shown in Table F-8 above, the MEC for diazinon in the effluent from the CWTP (Discharge Point No. 002), the Sump 2/2A Flow Control Structure (Discharge Point Nos. 004 and 005), and Pioneer Reservoir (Discharge Point No. 006) all exceeded the applicable water quality objective for diazinon. However, the MECs were all observed in January/February 2000; since then all values for diazinon were reported as non-detect (at a reporting limit of 0.25 µg/L).

Results of effluent monitoring conducted by the Discharger using USEPA Method 507, from January 2000 through January 2008, indicate concentrations of chlorpyrifos have been reported as non-detect at the analytical reporting limit of 1.0 µg/L.

Diazinon and chlorpyrifos can now be analyzed using USEPA Method 8141A,USEPAMethod 625M or an equivalent GC/MS method to reporting limits of 0.020 µg/L and 0.010 µg/L, respectively. Since diazinon has not been detected in the effluent since 2000, and chlorpyrifos has not been detected, this Order does not include effluent limitations for these pollutants. However, this Order includes new monitoring requirements that specify a lower reporting limit sufficient for comparison with the applicable diazinon and chlorpyrifos water quality objectives and for use in the additive toxicity calculation. If diazinon and/or chlorpyrifos are detected in the effluent at a level with the reasonable potential to exceed the water quality objectives, this Order may be reopened to include effluent limitations for diazinon and chlorpyrifos.

The Discharger, as part of their Public Outreach Program component of their Stormwater Quality Improvement Plan (as required under Municipal Separate Storm Sewer System Order R5-2008-0142), implements a variety of educational stormwater and urban runoff outreach programs. These programs are designed in part to reduce to the maximum extent practicable, pollutants in stormwater discharges associated with the application of

pesticides, herbicides, and fertilizer. As these programs are implemented City-wide, the programs should also assist in reducing the likely presence of diazinon and chlorpyrifos when CSO discharges occur.

iii. Mercury

The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "*...more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

Mercury bioaccumulates in fish tissue and, therefore, the discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and impact beneficial uses. The Sacramento River (Delta Waterways - northern portion) has been listed as an impaired water body pursuant to CWA section 303(d) because of mercury and the discharge must not cause or contribute to increased mercury levels.

In February 2008, the Regional Water Board proposed Basin Plan amendments implementing the TMDL for methylmercury in the Delta. The 2008 proposed Basin Pan amendments include a concentration-based effluent limitation of 0.24 ng/L and a wasteload allocation of 0.24 grams per year that would apply to the Discharger. Based on the results of 10 samples provided by the Discharger to the Regional Water Board for the period December 2004 to March 2006, the Regional Water Board is currently re-evaluating the allocations to be applied to the Discharger. Because the TMDL and related Basin Plan amendment are not yet final, the proposed effluent limitation and wasteload allocation will not be applied in this Order. Due to the continued concerns related to mercury discharges in the Delta Waterways, and in an effort to continue to provide data to the Regional Water Board for use in evaluating sources, this Order includes new effluent monitoring requirements for mercury and methylmercury.

4. WQBEL Calculations

This Order includes WQBELs for chlorine residual, fecal coliforms, pH, settleable solids, and temperature. WQBELs for chlorine residual were based on the NAWQC and applied directly as effluent limitations. The WQBELs for fecal coliform were carried over from the previous Order. The WQBELs for pH were based on Basin Plan objectives and applied directly as effluent limitations. The WQBELs for settleable solids were based on Basin Plan narrative objectives and applied as a

maximum for each storm event. The WQBELs for temperature were based on the Thermal Plan and applied directly as effluent limitations.

5. Whole Effluent Toxicity (WET)

The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00) The Basin Plan also states that, "*...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate...*". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*"

No WET data exists for any of the CSO discharges from the Facility. Therefore, it is uncertain whether reasonable potential exists to exceed the Basin Plan narrative toxicity objective. Also due to the short-term, periodic nature of the discharges, the Regional Water Board is primarily concerned with the potential short-term, acute, toxicity in the CSO discharges. This Order requires annual WET monitoring to assess the potential for the CSO discharges to exceed the narrative toxicity objective.

D. Final Effluent Limitations

The following table summarizes the final effluent limitations that will apply to the CSO discharges from the Facility. These effluent limitations will only apply to Discharge Point Nos. 002, 003 and 006, as these discharge points represent the effluent from the Pioneer Reservoir (006) and CWTP (002 and 003) CSO treatment systems.

Table F-9. Summary of Final Effluent Limitations for CSO Discharges from Discharge Point Nos. 002, 003, and 006

Constituent	Units	Storm Year[1] Average	Storm Maximum	Storm Year[1] Median	Basis[2]
Discharge Point Nos. 002, 003, and 006					
Total Suspended Solids	mg/L	100[3,4]	--	--	EP/BPJ
Settleable Solids	ml/L	--	1.0	--	EP
Chlorine Residual[5]	mg/L	--	0.02	--	NAWQC
Fecal Coliform Organisms	MPN/100 mL	--	--	200[6]	EP/DPH
pH	standard units	--	[7]	--	EP/BP
Temperature	°F	--	[8]	--	EP/BP/TP

[1] 1 October through 30 September

[2] EP – Based on existing permit.
BP – Based on water quality objectives contained in the Basin Plan.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
DPH – Based on recommendations from the California Department of Public Health.
[3] In addition, two consecutive samples shall not exceed 150 mg/L.
[4] Pioneer Reservoir for flows of 250 mgd or less and all flows at the CWTP.
[5] The Discharger shall continuously operate the chlorination equipment when discharging to the Sacramento River.
[6] In addition, no three consecutive samples shall exceed 1,000 MPN/100 mL.
[7] The discharge shall not have a pH less than 6.5 nor greater than 8.5.
[8] The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.

1. Mass-based Effluent Limitations

40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. Pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., NAWQC) and mass limitations are not necessary to protect the beneficial uses of the receiving water. Due to the intermittent and infrequent nature of the discharge, mass-based effluent limitations have not been developed.

2. Averaging Periods for Effluent Limitations

40 CFR 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable. Due to the periodic and short-term nature of CSO discharges from the CSS, the application of average monthly effluent limitations is not considered necessary; effluent limitations need to be protective when discharges themselves occur. As all effluent limitations except for TSS are based on application of water quality objectives at end-of-pipe, they should be protective of receiving water quality. The averaging period for total coliform organisms is based on DPH recommendations for protection of the MUN beneficial use.

3. Satisfaction of Anti-Backsliding Requirements

All effluent limitations in this Order are at least as stringent as the effluent limitations in the existing Order.

4. Satisfaction of Antidegradation Policy

This Order limits discharges to 85 percent, by volume, of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis. This requirement satisfies the "presumption approach" in the CSO Policy and is therefore presumed to comply with the CWA's water quality standards, including the antidegradation policy. In addition this Order does not allow for an increase in flow or mass of pollutants to the receiving water. The Discharger's implementation of the LTCP has decreased the number of CSO events over time. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the

discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on TSS. The WQBELs consist of restrictions on chlorine residual, pathogens (fecal coliform), pH, and temperature. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that

adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for ammonia, bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater – Not Applicable

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess the performance of the Pioneer Reservoir and CWTP treatment systems. The monitoring frequencies for flow, total suspended solids and settleable solids (once per discharge event) have been retained from Order No. 5-01-258.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Monitoring for those pollutants expected to be present in discharges from Discharge Point Nos. 002 (Monitoring Location EFF-002), 003 (Monitoring Location EFF-003), and 006 (Monitoring Location EFF-006) will be required as shown in the proposed MRP (Attachment E). To determine compliance with effluent limitations, the proposed monitoring plan carries forward monitoring requirements (grab samples during each discharge event) for chlorine residual, fecal coliform, temperature, pH, settleable solids, and total suspended solids from Order No. 5-01-258. Also consistent with Order No. 5-01-258, flow is required to be monitored continuously. Due to concerns related to ammonia toxicity in CSO discharges, monitoring for ammonia nitrogen will also be required (grab samples during each discharge event).

3. Regular monitoring for diazinon and chlorpyrifos in discharges from Discharge Point Nos. 002 (Monitoring Location EFF-002), 003 (Monitoring Location EFF-003), and 006 (Monitoring Location EFF-006) will be required to collect additional data to determine if a reasonable potential exists to exceed water quality standards as specified in the applicable TMDL. Grab samples once per discharge event will be required.

   Results of effluent monitoring conducted by the Discharger indicate reported detection levels of 0.25 µg/L for diazinon and 1.0 µg/L for chlorpyrifos, which are greater than the applicable water quality objectives (0.10 µg/L for diazinon and 0.015 µg/L for chlorpyrifos). This Order specifies a lower reporting limit sufficient for comparison with the applicable diazinon and chlorpyrifos TMDL wasteload allocations. Diazinon and chlorpyrifos can now be analyzed using USEPA Method 8141A, USEPA Method 625M or equivalent GC/MS method to reporting limits of 0.020 µg/L and 0.010 µg/L, respectively.

4. Order No. 5-01-258 also established monitoring requirements for copper, lead, and zinc in discharges from Discharge Point Nos. 002 (Monitoring Location EFF-002), 003 (Monitoring Location EFF-003), and 006 (Monitoring Location EFF-006). These specific monitoring requirements have been removed from the Monitoring and Reporting Program. As part of the CSO Program Assessment required in section VI.C.2.a, the Discharger will propose a monitoring program plan. This monitoring program will address the CTR pollutants (including copper, lead and zinc).

5. The Sacramento – San Joaquin Delta is on the 303(d) list for mercury. The Regional Water Board proposed a TMDL for methylmercury in 2008 applicable to this Discharger, and is currently re-evaluating the allocations in preparation for establishing the final TMDL. Therefore, this Order establishes monitoring in discharges from Discharge Point Nos. 002 (Monitoring Location EFF-002), 003 (Monitoring Location EFF-003), and 006 (Monitoring Location EFF-006) during each discharge for total mercury and methylmercury in order to collect data on the presence of mercury in the effluent.

6. Although discharges from Discharge Point Nos. 004, 005 and 007 rarely occur, this Order requires monitoring when a discharge does occur for several indicator parameters. This data will be used to assess the potential impact(s) to the receiving water when a CSO discharge does occur from any of these discharge points.

7. Routine monitoring for priority pollutants will allow for the characterization of any CSO discharges that occur to the Sacramento River during the permit term. This Order requires annual monitoring for priority pollutants and several other constituents of concern. See Attachment I for more detailed requirements related to the required priority pollutant monitoring.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Due to the concerns over the potential short-term toxicity that may result from CSO discharges, the Discharger is required to perform annual acute whole effluent toxicity testing.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. To the extent the data complies with the monitoring requirements of this Order, the Discharger may utilize data collected as part of Order No. 5-01-258, as well as data and information collected as part of the Discharger's municipal separate storm sewer system (MS4) program (as required in Order No. R5-2008-0142/NPDES Permit No. CAS082597).

E. Other Monitoring Requirements – Not Applicable

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42.

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. Mercury. This provision allows the Regional Water Board to reopen this Order in the event that a mercury or methylmercury TMDL is adopted. In addition, this Order may be reopened if the Regional Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

b. Compliance with State-Wide Sanitary Sewer System General Order. On May 2, 2006, the State Water Board adopted State Water Board Order 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. Upon reissuance, should the existing State Water Control include new requirements for combined sewer systems in the revised General Order, this Order may be reopened to address applicable requirements or require coverage under the revised General Order.

2. Special Studies and Additional Monitoring Requirements

a. CSS Water Quality Assessment. The Discharger's CSS program is in compliance with the USEPA CSO Control Policy since the post construction condition has met the requirements for the Presumption Approach with untreated CSOs averaging less than one per year and 92 percent of the CSS flow volume is treated during storm events receiving primary treatment. The Discharger completed and submitted a water quality assessment in the Effluent and Receiving Water Quality and Toxicity Summary Report in 1995 that demonstrated compliance with water quality based objectives. Since 1995, the Discharger's has not evaluated whether its implemented LTCP projects under the presumption approach are ensuring continued compliance with water quality standards or are adequately protecting designated uses.

Therefore this Order requires the Discharger to complete a water quality assessment that updates the 1995 assessment report to demonstrate compliance with applicable water quality based objectives for remaining CSOs, including protection of designated uses. The intent of the assessment is to determine if the Discharger's Long-Term Control Plan (which is based on the USEPA CSO Control Policy's Presumption Approach) continues to achieve compliance with applicable State water quality objectives and protects designated uses of the Sacramento River for remaining CSOs.

Specifically, by 1 September 2010, the Discharger is to provide to the Regional Water Board for review and approval, a plan for conducting the water quality assessment, including proposed data, data sources and methodology(ies) to be used for evaluating compliance. The water quality assessment plan should describe the monitoring that will be conducted to collect data for use in the assessment, including:

1) Pollutant parameters (including individual pollutants of concern, indicator pollutants, and other indicator tests such as whole effluent toxicity). The Discharger will also be required to monitor for *Giardia* and *Cryptosporidium*.

2) Sampling locations.

3) Sampling frequencies.

4) Analytical methods.

Monitoring shall, at a minimum, include two full wet weather seasons. In developing the plan, the Discharger may propose coordinating data collection with 1) the routine pollutant monitoring required as part of the Monitoring and Reporting Program (see Attachment E), and 2) the monitoring program required as part of the Discharger's municipal separate storm sewer system (MS4) program (as required in Order No. R5-2008-0142/NPDES Permit No. CAS082597).

The Discharger must complete the water quality assessment and provide a report to the Regional Water Board by **no later than 30 January 2013**. The CSO water quality assessment report will, at a minimum, include the following components:

i. An analysis evaluating the potential impact of CSO discharges in relation to all applicable water quality objectives (including Basin Plan and CTR water quality objectives) and designated uses. If existing water quality objectives cannot be achieved and designated uses adequately protected, then the Discharger shall also assess the need for coordination with the Regional Water Board for the review and revision of water quality objectives and implementation procedures to ensure that future CSS controls will be sufficient to meet water quality objectives.

ii. An evaluation of necessary updates and/or revisions to the Nine Minimum Controls and/or Long-Term Control Plan if the assessment indicates that applicable water quality objectives are exceeded or that designated uses are impaired. The Discharger shall also provide proposed time frames for implementation of any proposed CSS program updates and/or revisions.

3. Best Management Practices and Pollution Prevention – Not Applicable

4. Construction, Operation, and Maintenance Specifications

a. Combined Wastewater Control System Plan of Operations. The Discharger will be required to revise and update as necessary their Combined Wastewater Control System Plan of Operations to ensure compliance with the Nine Minimum Controls and/or Long-Term Control Plan requirements in this Order. The existing Combined Wastewater Control System Plan of Operations primarily focuses on management of flows through the CSS during wet and dry weather. However,

the Combined Wastewater Control System Plan of Operations must clearly establish operation, maintenance, and inspection procedures to maximize the removal to maximize the removal of pollutants during and after each precipitation event using all available facilities within the combined wastewater collection and treatment system, with the goal of achieving the highest treatment possible and minimizing CSOs and CSS outflows.

The Discharger is required to operate the combined wastewater collection and treatment system in conformance with the approved Combined Wastewater Control System Plan of Operations and shall report any variation from the Plan in the monthly monitoring reports provided to the Regional Water Board. Further modifications to the Combined Wastewater Control System Plan of Operations must be submitted for review and approval by the Executive Officer before they may become effective.

Also, due to the potential impact to the Sacramento River related to the discharge of untreated wastewater from Sump 2 Bypass (Discharge Point Nos. 004 and 005), and Sump 1A Bypass (Discharge Point No. 007, the Discharger is required to prepare and submit a report to the Regional Water Board that describes the circumstances under which the overflow(s) occurred. As part of this report, the Discharger shall evaluate whether the overflows could have been avoided with operational measures and infrastructure improvements, and propose as necessary any modifications necessary to the Combined Wastewater Control System Plan of Operations.

b. Implementation of the NMCs. The NMCs are technology-based requirements for CSOs. Implementation of the NMCs was required in Order No. 5-01-258, and this Order will carry over those requirements. In addition to requiring continued implementation of the NMCs, this Order will require the Discharger to improve on the implementation of several NMCs and increase the level of documentation required. These additional requirements are predominantly the result of the USEPA Region 9 findings and recommendations resulting from the September 2004 and July 2005 compliance evaluation inspections (see Section II.D of this Fact Sheet for more information regarding the compliance inspections).

i. Nine Minimum Controls No. 1. Conduct Proper Operations and Regular Maintenance Programs

The existing Order required the Discharger to implement the Operations and Maintenance Plan (the Plan), to update the Plan, and operate and maintain the combined sewer system according to the Plan. It also required the Discharger to keep records documenting implementation of the Plan.

The USEPA CEI noted that the Discharger had not developed and implemented a program to control discharges of fats, oils, and grease (FOG) to the combined sewer system. USEPA also noted that the City did not have standardized procedures to estimate and collect data on outflows from the combined sewer system and the sanitary sewer system that flows through the

combined system. Finally, USEPA also noted that rehabilitation and replacement of sewer pipes needs to occur in a timely manner.

In its 13 January 2006 response to the USEPA's draft final report, the Discharger stated that discussions in the draft report did not fully address existing and forthcoming elements of the Discharger's FOG control program. The Discharger cited that City Code provisions existed for dealing with any prohibited discharges of FOG to the system. The Discharger stated that these are violation-based remedies as opposed to the USEPA-preferred regulatory program limiting the introduction of FOG to the collection system.

Based on information obtained from the Discharger's website (http://www.cityofsacramento.org/utilities/sewer/) it appears that the Discharger is now implementing a FOG control program in conjunction with other local government entities referred to as "Stop the Clog". The FOG control program is a joint partnership between the Sacramento Regional County Sanitation District, Sacramento Area Sewer District (including the cities of Citrus Heights, Elk Grove, Rancho Cordova and unincorporated areas of Sacramento County) and the cities of Folsom, Sacramento and West Sacramento. The FOG control program focuses on outreach and education, as well as prioritizing areas more likely to have an overflow for both outreach and education and maintenance and operation efforts.

The following is from the Discharger's ROWD submitted 2 June 2006:

> *"In addition to the Combined Sewer System (CSS), the City also owns and operates a separate sanitary sewer collection system. On May 2, 2006, the State Water Resources Control Board adopted Statewide General Waste Discharge Requirements for publicly owned sanitary sewer systems. (Order WQ 2006-003.) The City is required to seek coverage for its separate sewer system under that order within 6 months of its adoption (November 1, 2006). It is our expectation that the requirements for the City's separate sewer system, including reporting, operations, maintenance and management will be those set forth in Order WQ 2006-003 and that the renewed CSS NPDES permit will not include additional or different requirements. One of the requirements of the Statewide WDR is to develop and submit a "fats, oils and grease" (FOG) program. The program, developed pursuant to Order WQ 2006-003 will incorporate requirements for all restaurants in the City, including those located within the CSS."*

This Order requires the Discharger to continue to implement its existing FOG program throughout the City.

This permit requires the Discharger to update its Combined Wastewater Control System Plan of Operations. The Discharger must provide more detail on the organization and people responsible for implementing the plan and the resources allocated to implementing the plan. Additionally, this permit

requires the Discharger to address issues that USEPA identified during the CEIs, including specifying an inspection and maintenance schedule and procedures for the CSS, as well as requires a description for when and under what circumstances Discharge Point Nos. 004, 005 and 007 are used (and treatment if any that is provided prior to discharge).

The Discharger can obtain additional information on developing an effective inspection and maintenance program in Chapter 2 of the USEPA's guidance manual entitled *Combined Sewer Overflows: Guidance for Nine Minimum Controls* (EPA 832-95-003, May 1995).

ii. Nine Minimum Controls No. 2. Maximize Use of the Collection System for Storage

The existing Order required the Discharger to maximize the in-line storage capacity of the collection system in light of the need to balance the storage needs with the goal of preventing outflows of sewage from the collection system to City streets. The Order also required the Discharger to keep records documenting implementation.

In its draft CEI report USEPA noted that the Discharger had increased the in-line and off-line storage capacity of the combined sewer system towards the goal of reducing street flooding and outflows from the CSS. USEPA also noted that the Discharger has additional storage and relief projects for some areas that remain prone to flooding or outflows during storms but not for all areas that experience flooding or outflows. USEPA concluded that the Discharger has not yet maximized the use of the collection system for storage. USEPA also states that the need for additional measures to reduce flooding and outflows is better addressed in the context of the Discharger's LTCP.

In its response to the USEPA draft final report, the Discharger took issue with USEPA's statement that the Discharger has not satisfied the objective of the minimum control to maximize the storage capacity of the combined sewer system. The Discharger believes that the completed projects have satisfied the intent of this minimum control, which is to maximize storage capacity of the existing collection system. The need for any additional projects should be addressed as part of the LTCP.

It is agreed that additional projects involving major construction to increase storage (in-line or off-line) should be addressed as part of the LTCP. However, any projects that the Discharger has previously committed to implement can be addressed within the context of this minimum control.

This Order requires the Discharger to investigate the feasibility of increasing the storage capacity of the existing CSS and the up-system separate sanitary sewer system based on the results of the CSS Water Quality Assessment

required in Section VI.C.2.a of the Order. Depending on the outcome of the assessment, the Discharger may need to evaluate, among other things, reducing infiltration and inflow to the collection systems, retarding inflows to the system, and using localized detention in appropriate upstream portions of the collection system. The Discharger must be sensitive to the possibility that actions to increase the storage capacity of the collection system may exacerbate the outflows that the system currently experiences. USEPA's *Combined Sewer Overflows: Guidance for Nine Minimum Controls* (EPA 832-B-95-003, May 1995) provides the Discharger with a number of alternative actions that it can look at.

iii. Nine Minimum Controls No. 3. Review and Modify Pretreatment Program

The existing Order required the Discharger to continue implementation of selected controls to minimize the impact of non-domestic discharges on the CSOs. It also required the Discharger to re-evaluate at an appropriate frequency whether additional modifications to its pretreatment program are feasible or of practical value and to keep records to document this evaluation of selected CSO controls to minimize CSO impacts from non-domestic discharges to the combined sewer system.

The purpose of this NMC is to ensure that the Discharger assesses the potential impacts from non-domestic user discharges to the collection system when CSOs do occur, and evaluate whether additional controls (e.g., delayed release volume controls) are required. The Discharger is not required to have an approved pretreatment program to regulate non-domestic users of the CSS; the Sacramento Regional County Sanitation District (SRCSD) operates a pretreatment program and regulates the discharges from non-domestic users in the City. It is uncertain whether an evaluation of the potential contribution from non-domestic users when CSOs occur has been performed by the Discharger, whether the SRCSD pretreatment program contains a component that would address discharges specifically to the CSS (or the separate sanitary sewer that flows into the CSS), and whether modifications to the SRCSD pretreatment program are necessary to minimize the impacts of CSOs on receiving water quality.

This permit requires the Discharger to prepare a report that evaluates the potential impact of non-domestic discharges to the CSS and the up-stream sanitary system during precipitation events. Additionally, this permit requires the Discharger to investigate the feasibility of limiting batch discharges by significant industrial users to the combined sewer system and the up-stream sanitary system during wet weather events and to study the feasibility of requiring industrial users to retain wastewater during wet weather events.

iv. Nine Minimum Controls No. 4. Maximize Flow to the POTW Treatment Plant

The existing Order required the Discharger to convey 60 mgd to the SRWTP for secondary treatment and to maximize flows to the Pioneer Reservoir and the CWTP. It also required the Discharger to give equal priority to the primary treatment facilities after the approval of an upgrade for the Pioneer Reservoir. The Discharger was required to maintain records to document these actions.

USEPA, in its CEI report, identified no issues with the Discharger's maximization of flows to the treatment facilities. USEPA did note that during the 19 September 2004 storm event, the Discharger did manage to convey 60 mgd to the SRWTP throughout most of the event although the flow to the SRWTP may have dropped below 60 mgd when the Sump 2A dry-side pumps were clogged with debris. However, the clogging did cause back-ups into, and outflows from, the CSS.

In its 13 January 2006 response, the Discharger stated that it does not believe that discussions of compliance with this NMC (as well as compliance with NMCs Nos. 6, 7, and 8) should not be based on impacts associated with the 19 September 2004 storm event. The Discharger cites this storm as a 1-in-50,000 year storm event, and that it far exceeded the capacity of the CSS.

While the Discharger believes that storm events such as the September 19 storm should not be included in compliance discussions, the Discharger must be sensitive to the fact that large storms that may exceed the capacity of the CSS that may result in outflows and flooding. The outflows and flooding must be considered when discussing compliance with permit conditions for controlling CSOs and outflows from the CSS.

This Order requires the Discharger to continue operating the combined wastewater treatment system at maximum treatable flow during wet weather events and to report rainfall and flow data to the Regional Water Board.

v. Nine Minimum Controls No. 5. Prohibit CSOs During Dry Weather

The existing Order prohibited dry weather overflows from the CSO outfalls and required the Discharger to report these overflows to the Board within 24 hours of discovery. When such an overflow occurs, the Order required the Discharger to initiate corrective action immediately, inspect the overflow daily until it is eliminated, and record the overflow, its cause, the corrective actions taken, and the dates on which the overflow began and ended.

As part of the CEI, USEPA reviewed the Discharger's self-monitoring reports since 2002. The review showed no reported dry weather overflows. In its March 2002 status report, the Discharger reported that no dry weather overflows had occurred in the past 5 years.

This order requires the Discharger to continue to monitor and report dry weather overflows, to take corrective action in the event that there is a dry weather overflow, and record the necessary information.

vi. Nine Minimum Controls No. 6. Control of Solid and Floatable Materials in CSOs

The existing Order required the Discharger to implement measures to control solid and floatable materials in CSOs.

In its CEI report USEPA noted that the Discharger, in its March 2003 status report, stated that it has employed all reasonable methods to control the release of solid and floatable materials from its CSS. The Discharger cites the collection of green wastes from street gutters, use of Type B drop inlets to limit the entry of floatable oil and other substances into the CSS, the use of trash racks and bar screens at Sump 2A, and solids settling and floatable skimming at the Pioneer Reservoir and the CWTP. The CEI report further states that during the 19 September 2004 storm, two of the systems failed. Green waste washed into the CSS and obstructed the mechanical bar screens at Sump 2A. Although there were no CSOs during this storm, these obstructions caused outflows from the CSS.

In its response to the USEPA CEI report, the Discharger again stated that this was an unprecedented and unforeseen 1-in-50,000 year event that occurred during dry weather operations. The Discharger's position is that this storm and its impact on the CSS should not enter into a discussion of compliance with an Order's requirement to implement the NMC and document their implementation.

The Discharger must be sensitive to the fact that large storms may exceed the capacity of the CSS and may cause outflows and flooding. The Discharger must ensure that operational issues are addressed to minimize outflows and flooding during signification storm events.

This Order requires the Discharger to continue to implement its current measures to control solid and floatable materials, as well as to identify and study possible additional measures to restrict the entry of solid and floatable materials into the CSS. The Discharger should refer to USEPA's *Combined Sewer Overflows: Guidance for Nine Minimum Controls* to identify possible additional control measures.

vii. Nine Minimum Controls No. 7. Pollution Prevention Programs to Reduce Contaminants in CSOs

The existing Order requires the Discharger to implement a pollution prevention program to reduce the impact of CSOs on receiving waters and to

keep records documenting pollution prevention activities.

In its March 2002 status report, the Discharger described a number of pollution prevention measures that were being implemented (e.g., recycling, household hazardous waste collection, water conservation). During USEPA's CEI, these pollution prevention measures were not evaluated. Instead, the CEI focused on the issue of green wastes flowing into the CSS and obstructing the bar screens at Sump 2A resulting in outflows during the 19 September 2004 storm. USEPA suggested that the Discharger take steps to limit the introduction of green waste to the CSS.

In its 13 January 2006 response, the Discharger cited the intensity of the 19 September 2004 storm and further stated that the draft report's discussion presents an incomplete picture that suggests the Discharger is not implementing appropriate pollution control measures. The Discharger's response addressed the issue by citing a City ordinance that prohibits the containerized collection of green waste without the approval of a majority of Sacramento voters. The Discharger also described the various measures it has taken to minimize the potential drainage impacts of green waste.

This Order requires the Discharger to continue its pollution prevention program and to continue to keep appropriate records to document implementation of the program. Further, the Order will require that the Discharger identify opportunities for improving existing controls (including those controls implemented as part of the Discharger's MS4 program) for reducing the potential discharge of pesticides (e.g., diuron, chlorpyrifos, diazinon) during precipitation events when CSS outflows and CSOs are likely to occur. This evaluation shall be based on the results of the CSS Water Quality Assessment required in Section VI.C.2.a of the Order.

viii. Nine Minimum Controls No. 8. Notify the Public of CSOs

The existing Order requires the Discharger to implement a public notification program to inform the public of when and where outflows from the CSS to streets occur and when and where CSOs occur. The Discharger was required to include three elements in the program.

In its CEI report, USEPA stated that during the 19 September 2004 storm, the Discharger failed to provide timely and effective notification to the residents in impacted areas and that there were delays in placing barriers and warning signs in the impacted areas. Section 7 of the USEPA's CEI report provides a more detailed discussion of the identified weaknesses in the Discharger's 31 July 2001 Sewer Overflow Emergency Response Plan.

USEPA's CEI report also noted that the Discharger had yet to address a number of improvements recommended by the Regional Water Board in its 17 July 2003 letter to the Discharger (based on the Regional Water Board's

review of the 31 July 2001 and 22 January 2003 plan provided by the Discharger). In March 2007, the Discharger provided Standard Operating Procedures for Emergency Response that replaces the previous Sewer Overflow Emergency Response Plan. This document includes an incident response plan, as well as standard operating procedures for a wet weather CSO response, a SSO response, wet weather CSOs and SSOs, training, a CSO/Surcharge decision tree, and Rain Patrols. The Discharger includes, in this updated document, notification flow charts for sewer overflows into businesses and residences, streets, and waters of the State. These charts include responsibility for actions to take in the event that a Level A through D overflow poses an exposure hazard to the public.

Based on a review of the March 2007 Standard Operating Procedures for Emergency Response, it appears that the Discharger did not consider or incorporate a number of the Regional Water Board's recommendations. In addition to the Regional Water Board's comments on the previous Sewer Overflow Emergency Response Plan, the following recommendations are suggested:

- There is no provision for notifying the public other than restricting access to flooded areas and to minimize public exposure, including posting signs at the site. Additional postings at the site may occur when directed.
- In Section II, it states that the first step by the Utilities Department is that the Sewer Collection Field Crew will **attempt** (emphasis added) to estimate the volume of the overflow. The volume of the overflow must be determined. The volume of the overflow, in conjunction with its location, dictates the level of response for the event.
- Throughout Section II there are Notification Flow Charts to address a variety of spill situations (e.g., into a residence, into the street), however there are no time frames associated with the notifications or priority for which entities get contacted before others (e.g., according to the flow chart, it is uncertain whether the State Health Department would be notified before the Assistant City Manager would). Also, the Sewer Overflow Notification Checklist is to be used to document who was called and at what time.
- On page 32 of the document, there are two formulas for calculating the volume of a CSO and a SSO, respectively. In the CSO calculation, there is no overflow duration factor. It appears to be a simple volume calculation for a length of pipe multiplied by a conversion factor of 7.48 for converting cubic feet to gallons. The volume of a SSO will be determined by the on-site supervisor, using the formula: gpm x duration = volume. Although this formula is appropriate for standing water, it may not be appropriate for observed flowing outflows, where duration needs to be accounted for.
- On page 32, it states "Methods to be used to secure the site **may** (emphasis added) include...." This language must be stronger. A recommendation is that "Methods to be used to secure the site **must**

(emphasis added) include ....."

- On page 34, there is a CSO/Surcharge Decision Tree. Under this decision tree, when there is no debris present, the overflow is a Surcharge. When there is debris (fecal matter, toilet paper, etc.) present, the overflow is a CSO. When the overflow is deemed to be a surcharge, the actions to be taken are photo document the site and continue to monitor the event. When it's a CSO, corrective action is taken based on spill volume and location of the CSO. The document needs to define "surcharge". Is the absence of debris sufficient to only monitor the discharge?
- Rain Patrols are used to identify street flooding. Do they also estimate the volume of the overflow, determine whether it's a CSO or a surcharge, or secure the site to limit public access? This appears to be a very resource intensive method to identify instances of street flooding.
- The Discharger must submit documentation on what actions are to be implemented to secure the overflow site and to notify the public of the hazard. This documentation must include examples of the exposure notices referenced in Level B, C, and D overflow events.

Because this NMC measure addresses CSS outflows as well as CSO discharges, the Discharger should ensure that its updated document is consistent with the State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Specifically, Provision D. 13 (vi) delineates the minimal elements of an Overflow Emergency Response Plan necessary to protect public health and the environment.

Also, USEPA's *Combined Sewer Overflows: Guidance for Nine Minimum Controls* (EPA 832-B-95-003, May 1995) lists in Chapter 9 a number of measures that the Discharger can consider for implementation.

Finally, due to potential impacts of partially treated or untreated wastewater on downstream drinking water utilities, this Order requires the Discharger to include as part of the public notification process, notification to downstream drinking water agencies whenever there is a discharge to surface waters. At a minimum, the following agencies shall be notified:

- California Urban Water Agencies,
- Contra Costa Water District,
- Santa Clara Valley Water District,
- Zone 7 Water Agency,
- Alameda County Water District, and
- Metropolitan Water District of Southern California.

ix. Nine Minimum Controls No. 9. Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls

The existing Order requires the Discharger to regularly monitor CSO outfalls to effectively characterize CSO impacts and the efficacy of the CSO controls. The existing Order also required the Discharger to monitor at the CSO outfalls as well as monitor the Sacramento River upstream and downstream of the CSO outfalls.

In its CEI report USEPA noted that the Discharger met the provisions of the existing Order for monitoring the CSOs and the Sacramento River. The USEPA also noted that in the Discharger's 2002 status report, it used its SWMM model to estimate locations and volume of street flooding and outflows in the CSS. USEPA further noted that during the inspection, it found shortcomings in the Discharger's efforts to measure and document CSS flooding and outflows.

In its 13 January 2006 response to the USEPA's CEI report, the Discharger did not specifically address the USEPA's comment that it had shortcomings in documenting CSS flooding and outflows. The Discharger presented its position on documenting CSS overflows and outflows in the section of its response addressing USEPA's comments of the Discharger's Long-Term Control Plan and its Spill Response and Reporting.

This Order requires the Discharger to regularly monitor CSO outfalls to effectively characterize overflow impacts and the efficacy of CSO controls. It further requires that the Discharger update its procedures as necessary for monitoring and documenting the location of CSS flooding and outflows and for providing a reasonable estimate of overflow and outflow volumes.

b. Implementation of the LTCP. This Order will require the continued implementation of the Discharger's LTCP with the following interim goals to be met as progress is made towards the final goal of minimizing street flooding during a 10-year storm event and to prevent structure flooding during the 100-year storm event:

- Obtaining protection from a 5-year storm in the six areas of worst flooding (including downtown, north of Capital park; U.C. Medical Center area; immediately south of Highway 80 between Riverside and Freeport; the area northeast of Highway 99 and Highway 80 interchange; the area northwest of Highway 99 and Highway 80 interchange, and the Land Park area),

- Obtaining protection from a 5-year storm throughout the combined sewer system area,

- Obtaining protection from a 10-year storm in the six areas of worst flooding, and then

- Obtaining the goal of protection from a 10-year storm event throughout the combined sewer system.

5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable

6. Other Special Provisions

a. Requirements are included in the Order to ensure that the Discharger complies with applicable regulations for the disposal of collected screenings, sludge, and other solids removed from the CSS treatment systems.

7. Compliance Schedules – Not Applicable

VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of WDRs that will serve as an NPDES permit for the Facility. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through publishing in a local newspaper and posting at the appropriate public locations and the Central Valley Water Board website.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on **6 January 2010**.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: 28 January 2010
Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this Facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to James Marshall at 916-464-4772.

ATTACHMENT G – COMBINED SEWER SYSTEM OUTFLOW REPORTING REQUIREMENTS

Consistent with the intent of the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-003-DWQ) to notify the State and public of sanitary sewer overflows from collection systems that may potentially impact beneficial uses and public health, the following establishes the monitoring, record-keeping, reporting and notification requirements for combined sewer system (CSS) outflows.

For purposes of these requirements, a CSS outflow includes any spill, release, discharge or diversion of untreated or partially treated sewage or combined sewage and stormwater from the combined sewer collection system. CSS outflows include:

- Outflows or releases of untreated sewage or combined sewage and stormwater that reach waters of the United States;
- Overflows or releases of untreated or partially treated sewage or combined sewage and stormwater that do not reach waters of the United States; and
- Sewage or combined sewage and stormwater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of the combined sewer system.

CSS outflows do not include any combined sewer overflow (CSO) discharges from discharge points authorized under this Order (including Discharge Point Nos. 002 through 007).

Revisions to the CSS reporting requirements may be made at any time by the Executive Director, and may include a reduction or increase in the monitoring and reporting.

A. General Reporting Requirements

1. The Discharger must complete a Notice of Intent (NOI) for the combined sewer system and request a Sanitary Sewer System (SSO) Database account by registering through the California Integrated Water Quality System (CIWQS). This account will allow controlled and secure entry into the SSO Database. Additionally, within 30 days of receiving an account and prior to recording CSS outflows into the SSO Database, the Discharger must complete the "Collection System Questionnaire", which collects pertinent information regarding an Enrollee's collection system. The "Collection System Questionnaire" must be updated at least every 12 months.

2. Pursuant to Health and Safety Code section 5411.5, any person who, without regard to intent or negligence, causes or permits any untreated wastewater or other waste (e.g., combined wastewater and stormwater) to be discharged in or on any waters of the State, or discharged in or deposited where it is, or probably will be, discharged in or on any surface waters of the State, as soon as that person has knowledge of the discharge, shall immediately notify the local health officer of the discharge. Discharges of untreated or partially treated wastewater to separate storm drains and drainage channels, whether man-made or natural or concrete-lined, shall be reported as required above.

3. Any CSS outflow greater than 1,000 gallons discharged in or on any waters of the State, or discharged in or deposited where it is, or probably will be, discharged in or on any surface waters of the State shall also be reported to the California Emergency Management Agency (CALEMA) pursuant to California Water Code section 13271.

4. If the Discharger becomes aware that it failed to submit any relevant facts in any report required herein, the Discharger shall promptly submit such facts or information by formally amending the report in the Online SSO Database.

B. Notification Requirements

1. For any CSS outflow that results in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify CALEMA, the local health officer or directors of environmental health with jurisdiction over affected water bodies, and the Regional Water Board.

2. As soon as possible, but no later than twenty-four (24) hours after becoming aware of a CSS outflow that results in a discharge to a drainage channel or a surface water, the Discharger shall submit to the appropriate Regional Water Quality Control Board a certification that CALEMA and the local health officer or directors of environmental health with jurisdiction over the affected water bodies have been notified of the discharge.

C. CSS Outflow Categories

1. Category 1 - All discharges of sewage or combined sewage and stormwater resulting from a failure in the Discharger's combined sewer system that:

   a. Equal or exceed 1,000 gallons, or

   b. Result in a discharge to a drainage channel and/or surface water; or

   c. Discharge to a separate storm drainpipe that was not fully captured and returned to the CSS.

2. Category 2 - All other discharges of sewage or combined sewage and stormwater resulting from a failure in the Discharger's CSS.

3. Private Lateral Sewage Discharges - Sewage or combined sewage and stormwater discharges that are caused by blockages or other problems within a privately owned lateral.

D. CSS Outflow Reporting Timeframes

1. Category 1 CSS Outflow - Except as provided in B. above, all CSS Outflows that meet the above criteria for Category 1 CSS Outflows must be reported as soon as: (1) the Discharger has knowledge of the discharge, (2) reporting is possible, and (3)

reporting can be provided without substantially impeding cleanup or other emergency measures. Initial reporting of Category 1 CSS Outflows must be reported to the Online SSO System as soon as possible but no later than 3 business days after the Discharger is made aware of the CSS outflow. Minimum information that must be contained in the 3-day report must include all information identified in section E.1 below, except item E.1.k. A final certified report must be completed through the Online SSO System within 15 calendar days of the conclusion of CSS outflow response and remediation. Additional information may be added to the certified report, in the form of an attachment, at any time.

The above reporting requirements do not preclude other emergency notification requirements and timeframes mandated by other regulatory agencies (local County Health Officers, local Director of Environmental Health, Regional Water Boards, CALEMA or State law.

2. Category 2 CSS Outflows - All CSS Outflows that meet the above criteria for Category 2 CSS outflows must be reported to the Online SSO Database within 30 days after the end of the calendar month in which the CSS outflow occurs (e.g., all CSS outflows occurring in the month of January must be reported to the Regional Water Board by March 1st).

3. Private Lateral Sewage Discharges - All sewage discharges that meet the above criteria for Private Lateral sewage discharges may be reported to the Online SSO Database based upon the Discharger's discretion. If a Private Lateral sewage discharge is recorded in the Online SSO Database, the Discharger must identify the sewage or combined sewage and stormwater discharge as occurring and caused by a private lateral, and a responsible party (other than the Discharger) should be identified, if known.

4. If there are no CSS Outflows during the calendar month, the Discharger will provide, within 30 days after the end of each calendar month, a statement through the Online SSO Database certifying that there were no CSS Outflows for the designated month.

5. In the event that the Online SSO Database is not available, the Discharger must fax all required information to the Regional Water Board office (916-464-4600) in accordance with the time schedules identified above. In such event, the Discharger must also enter all required information into the Online SSO Database as soon as practical.

E. Mandatory Information to be included in CSS Outflow Reporting

The Discharger must report, at a minimum, the following mandatory information prior to finalizing and certifying a CSS outflow report for each category of CSS outflow:

1. Category 2 CSS Outflows:

   a. Location of the CSS outflow, including latitude and longitude coordinates, street address, city, state, zip code, cross street, and manhole number;

b. Applicable Regional Water Board, i.e. identify the region in which the CSS outflow occurred;

c. County where CSS outflow occurred;

d. Whether or not the CSS outflow entered a drainage channel and/or surface water;

e. Whether or not the CSS outflow was discharged to a separate storm drain pipe that was not fully captured and returned to the CSS;

f. Estimated CSS outflow volume in gallons;

g. CSS outflow source (manhole, cleanout, surcharge, flooding, etc.);

h. CSS outflow cause (mainline blockage, roots, etc.);

i. Time of CSS outflow notification or discovery;

j. Estimated operator arrival time;

k. CSS outflow destination;

l. Estimated CSS outflow end date/time; and

m. Certification. Upon Certification, the SSO Database will issue a Final SSO Identification (ID) Number.

2. Private Lateral Sewage Discharges:

a. All information listed above (if applicable and known), as well as;

b. Identification of sewage or combined sewage and stormwater discharge as a private lateral sewage discharge; and

c. Responsible party contact information (if known).

3. Category 1 CSS Outflows:

a. All information listed for Category 2 CSS outflows, as well as;

b. Estimated CSS outflow volume that reached surface water, drainage channel, or not recovered from a separate storm drain;

c. Estimated CSS outflow amount recovered;

d. Response and corrective action taken;

e. If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA must be selected.;

f. Parameters that samples were analyzed for (if applicable);

g. Identification of whether or not health warnings were posted;

h. Beaches impacted (if applicable). If no beach was impacted, NA must be selected;

i. Whether or not there is an ongoing investigation;

j. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the CSS outflow and a schedule of major milestones for those steps;

k. OES control number (if applicable);

l. Date OES was called (if applicable);

m. Time OES was called (if applicable);

n. Identification of whether or not County Health Officers were called;

o. Date County Health Officer was called (if applicable); and

p. Time County Health Officer was called (if applicable).

F. Reporting to Other Regulatory Agencies

These reporting requirements do not preclude the Discharger from reporting CSS outflows to other regulatory agencies pursuant to California state law.

1. The Discharger shall report CSS outflows to CALEMA, in accordance with California Water Code Section 13271.

   CALEMA
   Phone (800) 852-7550

2. The Discharger shall report CSS outflows to County Health officials in accordance with California Health and Safety Code Section 5410 et seq.

G. Record Keeping

1. Individual CSS outflow records shall be maintained by the Discharger for a minimum of 5 years from the date of the CSS outflow. This period may be extended when requested by the Regional Water Board Executive Officer.

2. All records shall be made available for review upon State or Regional Water Board staff's request.

3. All monitoring instruments and devices that are used by the Discharger to fulfill the prescribed monitoring and reporting program shall be properly maintained and calibrated as necessary to ensure their continued accuracy;

4. The Discharger shall retain records of all CSS outflows, such as, but not limited to and when applicable:

   a. Record of Certified report, as submitted to the Online SSO Database;

   b. All original recordings for continuous monitoring instrumentation;

   c. Service call records and complaint logs of calls received by the Discharger;

   d. CSS outflow calls;

   e. CSS outflow records;

   f. Steps that have been and will be taken to prevent the CSS outflow from recurring and a schedule to implement those steps;

   g. Work orders, work completed, and any other maintenance records from the previous 5 years which are associated with responses and investigations of system problems related to CSS outflows;

   h. A list and description of complaints from customers or others from the previous 5 years; and

   i. Documentation of performance and implementation measures for the previous 5 years.

5. If water quality samples are required by an environmental or health regulatory agency or State law, or if voluntary monitoring is conducted by the Discharger or its agent(s), as a result of any CSS outflow, records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements;

   b. The individual(s) who performed the sampling or measurements;

   c. The date(s) analyses were performed;

   d. The individual(s) who performed the analyses;

   e. The analytical technique or method used; and,

   f. The results of such analyses.

H. Certification

1. All final reports must be certified by a person designated, for a municipality, state, federal or other public agency, as either a principal executive officer or ranking elected official, or by a duly authorized representative of that person, as described in Section V.B. of the Standard Provisions (Attachment D). (For purposes of electronic reporting, an electronic signature and accompanying certification, which is in compliance with the Online SSO Database procedures, meet this certification requirement.)

2. Registration of authorized individuals, who may certify reports, will be in accordance with the California Integrated Water Quality System's (CIWQS') protocols for reporting.

ATTACHMENT H – SUMMARY OF CITY OF SACRAMENTO LTCP UPDATES

Year	Project Name	LTCP Update (Projects Scheduled for Completion)						
		7/1/03 – 6/30/04	7/1/04 – 6/30/05	7/1/05 – 6/30/06	7/1/06 – 6/30/07	7/1/07 – 6/30/08	7/1/08 – 6/30/09	7/1/09 – 6/30/10
2003	Pioneer Reservoir Fiber Optic Cable	$200,000						
	41st Street/Folsom Blvd. Drain Improvements	$500,000						
	9th/10th Avenue Sewer, 5th to 6th Street	$56,000						
	36th St./Santa Ynez Sewer M to N Street	$42,000						
	Marshall/Portola Sewer	$95,000						
	Santa Ynez/36th St. Sewer Folsom to P Street	$145,452						
	G/H Alley Sewer Replacement-11th to 12th Street	$122,000						
	Sloat/2nd Ave. Sewer-24th to 27th Street	**$334,000**	**$328,000**					
	2nd Ave./Land Park Drive-Phase 2	$250,000						
	Broadway/Burnett Alley Sewer	$142,845						
	Crescent Way Sewer	$40,000						
	Misc. Drain Inlet Replacement 2003	$360,000						
	N Street Sewer Replacement- 25th to 29th Street	**$550,000**	**$990,000**	**$1,533,000 (with 29th St. and Capitol to N)**				
	U/V Alley Sewer Replacement- 4th to 5th Street	**$120,000**	**$120,000**					
	U/V Alley Sewer Replacement- 12th to 14th Street	**$280,000**	**$280,000**					
	U/V Alley Sewer Replacement- 21st to 24th Street	$410,000						
	Total	**$3,647,297**						

Year	Project Name	LTCP Update (Projects Scheduled for Completion)						
		7/1/03 – 6/30/04	7/1/04 – 6/30/05	7/1/05 – 6/30/06	7/1/06 – 6/30/07	7/1/07 – 6/30/08	7/1/08 – 6/30/09	7/1/09 – 6/30/10
2004	**U and S Street Parallel Sewer Project**		**$4,650,000**	**$5,613,000**				
	Various CSS pipe rehab projects		$1,133,000					
	T/U Alley Sewer Replacement 12th to 13th		$125,000					
	J Street Drain Inlet Replacement		$131,000					
	7th Street Sewer Replacement, Cost Share w/ RT		$1,700,000					
	Total		**$9,457,000**					
2005	**Sump 2A Catenary Rake**			**$100,000**	**$130,000**			
	S/T Alley Sewer Replacement 10th to 15th			**$655,000**	**$620,000**			
	S/T Alley Sewer Replacement 22nd to 29th			**$1,000,000**	**$820,000**			
	Drain Inlet Replacement, 2005			**$250,000**	**$250,000**			
	Stockton Blvd Sewer Rehab, 2nd to Y			$130,000				
	Serra/T Alley Sewer Rehab, 32nd to 34th			$60,000				
	I/J Alley Sewer Replacement 25th to 27th			$260,000				
	3rd Avenue Sewer Rehab-Stockton to 42nd Street			$120,000				
	E/F Alley Sewer Replacement 13th to 15th			$270,000				
	D/E Alley Sewer Replacement 25th to 27th			**$338,000**	**$784,000**	**$683,000**		
	E/F Alley Sewer Replacement 25th to 27th			**$353,000**				
	R Street Local Storage 11th to 13th			$806,000				
	McKinley Way Sewer Construction			**$2,278,000**	**$2,778,000**			
	13th and 12th Avenue Sewer Rehab			**$1,000,000**	**$650,000**	**$650,000**		
	H Street Sewer Rehab			$80,000				

Year	Project Name	LTCP Update (Projects Scheduled for Completion)						
		7/1/03 – 6/30/04	7/1/04 – 6/30/05	7/1/05 – 6/30/06	7/1/06 – 6/30/07	7/1/07 – 6/30/08	7/1/08 – 6/30/09	7/1/09 – 6/30/10
	32nd/33rd Sewer Rehab- 32nd to 34th Street			$50,000				
	Total			**$14,896,000**				
2006	N/O Alley Sewer Replacement, 20th to 22nd				$494,000			
	Flood Gates at Blue Diamond				**$225,000**	**$225,000**	**$243,000**	
	S Street Sewer Replacement, 7th to 11th				$1,500,000			
	13th Avenue Sewer Replacement				$350,000			
	J/K Alley Sewer Replacement, 9th to 11th				**$350,000**	**$450,000**	**$705,000**	
	Capitol/L Alley Sewer Replacement, 18th to 19th				**$165,000**	**$165,000**		
	CIPP 2006- (Portion within CSS only)				**$200,000**	**$200,000**		
	Total				**$9,316,000**			
2007	S/T Alley Sewer Replacement 18th to 19th					$175,000		
	Oak Park Diversion Study					$140,000		
	Drain Inlet Replacement FY 2006 and FY 2007					**$700,000**	**$500,000**	
	CSS Flow Meters					**$50,000**	**$50,000**	
	34/35 Alley Sewer Replacement at Folsom Blvd					$243,000		
	11th Street Sewer Replacement P/Q to R Streets					**$630,000**	**$630,000**	
	J Street Sewer Replacement 19th to 20th					$351,000		
	J/K Alley Sewer Replacement 22nd to 23rd					**$150,000**	**$150,000**	
	3rd Street CSS Relief Sewer Preliminary Design					**$310,000**	**$310,000**	
	Total					**$5,122,000**		
2008	CWTP Motor Control Center Replacement						$590,000	

Year	Project Name	LTCP Update (Projects Scheduled for Completion)						
		7/1/03 – 6/30/04	**7/1/04 – 6/30/05**	**7/1/05 – 6/30/06**	**7/1/06 – 6/30/07**	**7/1/07 – 6/30/08**	**7/1/08 – 6/30/09**	**7/1/09 – 6/30/10**
	Sump 2 Motor Control Center Replacement						$1,200,000	
	Sump 2A Pump Replacement						**$600,000**	**$600,000**
	Fremont Area Rehab-Phase 1						$425,000	
	Total						**$5,403,000**	
2009	5th Street Upsizing, U to P Streets							$2,140,000
	Drain Inlet Replacement, FY 2010							$400,000
	CSS Flow Meters							$50,000
	Flood Gates at Blue Diamond							$243,000
	Fremont Area Rehab – Phase 2							$425,000
	Total							**$3,858,000**

ATTACHMENT I – EFFLUENT MONITORING FOR PRIORITY POLLUTANTS AND OTHER CONSTITUENTS OF CONCERN

I. **Requirements.** The Regional Water Board is requiring monitoring for the following:

A. **Priority pollutants.** Effluent data are needed for all priority pollutants as listed in the California Toxics Rule (40 CFR 131.38).

B. **Drinking water constituents**. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.

C. **Effluent hardness and pH.** These are necessary because several of the CTR and Basin Plan constituents are hardness and pH dependent.

II. **Monitoring Requirements.**

A. **Annual Monitoring**. Annual priority pollutant samples shall be collected from the effluent (Monitoring Locations EFF-002, EFF-003, EFF-004, EFF-005, EFF-006, EFF-007) and analyzed for the constituents listed in Table I-1. Annual monitoring shall be conducted and the results of such monitoring be submitted to the Regional Water Board in accordance with the Reporting Requirements specified in Section X of the Monitoring and Reporting Program (Attachment E). Each individual monitoring event shall provide representative sample results for the effluent.

B. **Sample Type.** All effluent water samples shall be taken as grab samples.

Table I-1. Priority Pollutants

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
VOLATILE ORGANICS						
28	1,1-Dichloroethane	75343	Primary MCL	5	0.5	EPA 8260B
30	1,1-Dichloroethene	75354	National Toxics Rule	0.057	0.5	EPA 8260B
41	1,1,1-Trichloroethane	71556	Primary MCL	200	0.5	EPA 8260B
42	1,1,2-Trichloroethane	79005	National Toxics Rule	0.6	0.5	EPA 8260B
37	1,1,2,2-Tetrachloroethane	79345	National Toxics Rule	0.17	0.5	EPA 8260B
75	1,2-Dichlorobenzene	95501	Taste & Odor	10	0.5	EPA 8260B
29	1,2-Dichloroethane	107062	National Toxics Rule	0.38	0.5	EPA 8260B

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
	cis-1,2-Dichloroethene	156592	Primary MCL	6	0.5	EPA 8260B
31	1,2-Dichloropropane	78875	Calif. Toxics Rule	0.52	0.5	EPA 8260B
101	1,2,4-Trichlorobenzene	120821	Public Health Goal	5	0.5	EPA 8260B
76	1,3-Dichlorobenzene	541731	Taste & Odor	10	0.5	EPA 8260B
32	1,3-Dichloropropene	542756	Primary MCL	0.5	0.5	EPA 8260B
77	1,4-Dichlorobenzene	106467	Primary MCL	5	0.5	EPA 8260B
17	Acrolein	107028	Aquatic Toxicity	21	2	EPA 8260B
18	Acrylonitrile	107131	National Toxics Rule	0.059	2	EPA 8260B
19	Benzene	71432	Primary MCL	1	0.5	EPA 8260B
20	Bromoform	75252	Calif. Toxics Rule	4.3	0.5	EPA 8260B
34	Bromomethane	74839	Calif. Toxics Rule	48	1	EPA 8260B
21	Carbon tetrachloride	56235	National Toxics Rule	0.25	0.5	EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	Taste & Odor	50	0.5	EPA 8260B
24	Chloroethane	75003	Taste & Odor	16	0.5	EPA 8260B
25	2- Chloroethyl vinyl ether	110758	Aquatic Toxicity	122 (3)	1	EPA 8260B
26	Chloroform	67663	OEHHA Cancer Risk	1.1	0.5	EPA 8260B
35	Chloromethane	74873	USEPA Health Advisory	3	0.5	EPA 8260B
23	Dibromochloromethane	124481	Calif. Toxics Rule	0.41	0.5	EPA 8260B
27	Dichlorobromomethane	75274	Calif. Toxics Rule	0.56	0.5	EPA 8260B
36	Dichloromethane	75092	Calif. Toxics Rule	4.7	0.5	EPA 8260B
33	Ethylbenzene	100414	Taste & Odor	29	0.5	EPA 8260B
88	Hexachlorobenzene	118741	Calif. Toxics Rule	0.00075	1	EPA 8260B
89	Hexachlorobutadiene	87683	National Toxics Rule	0.44	1	EPA 8260B
91	Hexachloroethane	67721	National Toxics Rule	1.9	1	EPA 8260B
94	Naphthalene	91203	USEPA IRIS	14	10	EPA 8260B
38	Tetrachloroethene	127184	National Toxics Rule	0.8	0.5	EPA 8260B
39	Toluene	108883	Taste & Odor	42	0.5	EPA 8260B
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	0.5	EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	0.5	EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5	EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	Secondary MCL	5	0.5	EPA 8260B
	Trichlorofluoromethane	75694	Primary MCL	150	5	EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	Primary MCL	1200	10	EPA 8260B
	Styrene	100425	Taste & Odor	11	0.5	EPA 8260B
	Xylenes	1330207	Taste & Odor	17	0.5	EPA 8260B

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C
50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (5)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (6)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	5	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (3)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (3)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	3	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (7)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (7)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (7)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (7)	2	EPA 8270C

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (7)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	1	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	0.2	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C
INORGANICS						
	Aluminum	7429905	Ambient Water Quality	87	50	EPA 6020/200.8
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	0.01	EPA 1632
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	Basin Plan Objective	100	100	EPA 6020/200.8
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	0.5	EPA 7199/1636
6	Copper	7440508	National Toxics Rule	4.1 (2)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A
	Fluoride	7782414	Public Health Goal	1000	0.1	EPA 300
	Iron	7439896	Secondary MCL	300	100	EPA 6020/200.8
7	Lead	7439921	Calif. Toxics Rule	0.92 (2)	0.5	EPA 1638
	Manganese	7439965	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
9	Nickel	7440020	Calif. Toxics Rule	24 (2)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (2)	1	EPA 6020/200.8
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
	Tributyltin	688733	Ambient Water Quality	0.063	0.002	EV-024/025

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
13	Zinc	7440666	Calif. Toxics Rule/ Basin Plan Objective	54/ 16 (2)	10	EPA 6020/200.8
PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.02	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (9)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
	Alachlor	15972608	Primary MCL	2	1	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.019	EPA 8081A
119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
	Atrazine	1912249	Public Health Goal	0.15	1	EPA 8141A
	Bentazon	25057890	Primary MCL	18	2	EPA 643/ 515.2
	Carbofuran	1563662	CDFG Hazard Assess.	0.5	5	EPA 8318
	2,4-D	94757	Primary MCL	70	10	EPA 8151A
	Dalapon	75990	Ambient Water Quality	110	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	Public Health Goal	0.0017	0.01	EPA 8260B

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Criterion Quantitation Limit ug/L or noted	Suggested Test Methods
			Basis	Criterion Concentration ug/L or noted[1]		
	Di(2-ethylhexyl)adipate	103231	USEPA IRIS	30	5	EPA 8270C
	Dinoseb	88857	Primary MCL	7	2	EPA 8151A
	Diquat	85007	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	Primary MCL	100	45	EPA 548.1
	Ethylene Dibromide	106934	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/504
	Glyphosate	1071836	Primary MCL	700	25	HPLC/EPA 547
	Methoxychlor	72435	Public Health Goal	30	10	EPA 8081A
	Molinate (Ordram)	2212671	CDFG Hazard Assess.	13	2	EPA 634
	Oxamyl	23135220	Public Health Goal	50	20	EPA 8318/632
	Picloram	1918021	Primary MCL	500	1	EPA 8151A
	Simazine (Princep)	122349	USEPA IRIS	3.4	1	EPA 8141A
	Thiobencarb	28249776	Basin Plan Objective/ Secondary MCL	1	1	HPLC/EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	Ambient Water Quality	10	1	EPA 8151A
OTHER CONSTITUENTS						
	Ammonia (as N)	7664417	Ambient Water Quality	1500 (4)		EPA 350.1
	Chloride	16887006	Agricultural Use	106,000		EPA 300.0
	Hardness (as $CaCO_3$)			5000		EPA 130.2
	Foaming Agents (MBAS)		Secondary MCL	500		SM5540C
	Nitrate (as N)	14797558	Primary MCL	10,000	2,000	EPA 300.0
	Nitrite (as N)	14797650	Primary MCL	1000	400	EPA 300.0
	pH		Basin Plan Objective	6.5-8.5	0.1	EPA 150.1
	Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14		EPA 365.3
	Specific conductance (EC)		Agricultural Use	700 umhos/cm		EPA 120.1
	Sulfate		Secondary MCL	250,000	500	EPA 300.0
	Sulfide (as S)		Taste and Odor	0.029		EPA 376.2
	Sulfite (as SO_3)		No Criteria Available			SM4500-SO3
	Total Disolved Solids (TDS)		Agricultural Use	450,000		EPA 160.1

FOOTNOTES:
(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that detection limits be set lower than these values. These values are not intended to serve as effluent limitations.

(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.

(3) - For haloethers

(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22°C.

(5) - For nitrophenols.

(6) - For chlorinated naphthalenes.

(7) - For phthalate esters.

(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.

(9) - Criteria for sum of alpha- and beta- forms.

(10) - Criteria for sum of all PCBs.

III. Additional Study Requirements

I. **Laboratory Requirements.** The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code 13176 and must include quality assurance/quality control data with their reports (ELAP certified). In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided the laboratory institutes a Quality Assurance-Quality Control Program. A manual containing the steps followed in this program must be kept in the laboratory and must be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

J. **Criterion Quantitation Limit (CQL).** The criterion quantitation limits will be equal to or lower than the minimum levels (MLs) in Appendix 4 of the SIP or the detection limits for purposes of reporting (DLRs) below the controlling water quality criterion concentrations summarized in Table I-1 of this Order. In cases where the controlling water quality criteria concentrations are below the detection limits of all approved analytical methods, the best available procedure will be utilized that meets the lowest of the MLs and DLR. Table I-1 contains suggested analytical procedures. The Discharger is not required to use these specific procedures as long as the procedure selected achieves the desired minimum detection level.

K. **Method Detection Limit (MDL**). The method detection limit for the laboratory shall be determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).

L. **Reporting Limit (RL).** The reporting limit for the laboratory. This is the lowest quantifiable concentration that the laboratory can determine. Ideally, the RL should be equal to or lower than the CQL to meet the purposes of this monitoring.

M. **Reporting Protocols.** The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

1. 1. Sample results greater than or equal to the reported RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

2. Sample results less than the reported RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

3. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may shortened to "Est. Conc.). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quality may be percent accuracy (+ or – a percentage of the reported value), numerical ranges (low and high), or any other means considered appropriate by the laboratory.

4. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

N. Data Format. The monitoring report shall contain the following information for each pollutant:

1. The name of the constituent.

2. Sampling location.

3. The date the sample was collected.

4. The time the sample was collected.

5. The date the sample was analyzed. For organic analyses, the extraction data will also be indicated to assure that hold times are not exceeded for prepared samples.

6. The analytical method utilized.

7. The measured or estimated concentration.

8. The required Criterion Quantitation Limit (CQL).

9. The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136, Appendix B (revised as of May 14, 1999).

10. The laboratory's lowest reporting limit (RL).

11. Any additional comments.